Commentary

How Blind Is Blind Review?

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ABSTRACT

Background: No representative surveys of scientific opinion about blind review have been published, and there is very little information on the success of the blinding process. The *American Journal of Public Health* has practiced blind review since 1977.

Methods: In 1989 to 1990 312 of its reviewers were asked to identify author and institution in the manuscript they reviewed, to provide clues to such identification, to express their opinion concerning blind review, and to offer reasons for their opinion.

Results: Reviewers claimed to be able to identify author and/or institution in 47% of the 614 chances offered; identification was incorrect 16% of the time, overall identification correct 39% of the time. Self-referencing was the clue to identification in 62%, personal knowledge in 38% of the cases. If only personal knowledge cases are considered, blinding was successful 83% of the time. Blinding was favored by 75% of the reviewers with most asserting it eliminated bias. Reasons given for opposing blind review included the following: blinding not possible, identification will not influence judgment, and its obverse, identification assists judgment.

Conclusions: For the *American Journal of Public Health* blinding is usually, but not always, successful; and the majority of its reviewers favor current policy. Until more definitive data are in, reviewer preference, which differs from journal to journal, seems the most legitimate guide to journal policy on blind review. (*Am J Public Health*. 1991;81:843–845)

> Some judge of authors' names, not words, and then,
> Nor praise nor blame the writings, but the men.—*Alexander Pope*

Introduction

Whether or not to blind reviewers to the identity of the authors whose papers they are asked to review has been hotly debated for at least 20 years. In spite of firmly held opinions pro and con, no representative surveys of scientific opinion have been reported, and there is very little information on the prevalence of blinding as a practice or on the success of the blinding process.

Four surveys of the frequency of blinding have been published,[1–4] but none is based on a random sampling of journals from different scientific disciplines, and their size and response rates often leave something to be desired. Their results suggest that the majority of scientific journals do not practice blind review and that blinding may be more common in the social sciences than in the physical and medical sciences.

Small, narrowly focused studies of reviewer opinion about the desirability of blind review report varying proportions in favor of review: 39% with 11% having no opinion (personal communication, Lew Gidez, FASEB), 41% (*Diabetes Care*),[5] 49% (37% no opinion, *J Neuropathol-Exp Neurol*),[6] and 89% (*Schol Publ*).[7]

Personal opinions of the success of blinding not based on actual study also vary: 33%,[8] 50% to 60%,[9] and 90%.[10] The reported success of blinding in *J Neuropathol Exp Neurol* was 66% when 55% of all eligible manuscripts were eliminated because of self-referencing,[6] and 73% (*Arch Intern Med*)[11] when self-referencing was partially eliminated.

Reviewer opinions about signing their reviews will be influenced by journal policy. Some journals have encouraged reviewers to sign their reviews arguing that the review process should be completely open. Journals which encourage the practice report a signing rate of only 43% (*Arch Intern Med*)[11] and 58% (*J Lab Clin Med*).[12] *Diabetes Care* reported that 80% of its reviewers opposed mandatory signing, but 53% favored optional signing.[5] Two other small reviewer surveys report 77% (*Schol Publ*)[7] and 46%[6] (47% no opinion) favoring anonymity for reviewers.

The editorial board of the *American Journal of Public Health* (*AJPH*) voted to adopt a policy of blind review in 1976. I was skeptical about its value but agreed to survey reviewer opinion. After the first hundred reviewer returns, it was evident that the vast majority of *AJPH* reviewers favored blind review, and the policy was implemented in 1977. In the 13 following years only two of more than 1000 reviewers have refused to review a manuscript because of the blinding policy.

Contributors to *AJPH* are instructed to submit a second face sheet which includes only the title of the paper. These instructions are usually followed. We remove acknowledgments, but make no further effort to remove identifying page headers (when present contrary to instructions) or to change the text or references. We have been aware that a substantial proportion of our manuscripts are not truly blinded because of text allusions and

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TABLE 1—Proportion of Correct Identifications of Author and Institution According to "Yes" and "Maybe" Responses

	Author		Institution		Total	
Response Type	%	n	%	n	%	n
Yes	96	(67)	89	(87)	92	(154)
Maybe	70	(66)	80	(66)	75	(132)
Total	83	(133)	85	(153)	84	(286)[b]

[a]Difference in proportion: Yes-Maybe total = 17 (95% correct identifications, 25.5, 6.5).
[b]Both chances taken: 112; Author only taken: 24; Institution only taken: 38.

TABLE 2—Proportion of Correct Identifications of Author and Institutions According to Type of Chance Taken

		Correct Identification (%)	
Type of Chance Taken	*N*	Author	Institution
Author only	24	83	—
Institution only	38	—	82
Both author and institution	112	83	87
Total	286[a]	83	85

[a]Both chances taken doubled in total.

self-referencing; we so inform reviewers in a covering letter that accompanies the manuscript.

Because of the current interest in blinding I undertook a more extended study in late 1989 and early 1990. Its purpose was to find out how often blinding was successful, to identify the give-away clues, and to determine the opinions of our reviewers about the policy. Our communications to the reviewer were unchanged except for the addition of a questionnaire.

Methods

A short questionnaire was sent to reviewers with consecutive blinded manuscripts. It asked whether author and institution were identifiable (yes/no/maybe) and if so, to record their names and describe the clues that led to their identification. Identification was considered correct if any one of the several authors or institutions represented were listed in the response. A second set of questions asked whether they favored blind review (yes/no) and their reasons for such an opinion. Reviewers were asked to return the form to the editor with their review. They were requested to complete the form only once although they may have reviewed more than one paper during the period of the study.

One of the arguments against blinding is that the review process should be completely open, i.e., if the identity of authors is disclosed, reviewers, in turn, should be willing to sign their reviews. For this reason, persons who were not in favor of blind review were sent another questionnaire. They were asked whether they would like to receive the full face sheet containing the name and institution of the author on the manuscripts sent to them for review (yes/no/no preference) and, if yes, whether they intended then to sign their reviews (yes/no).

Results

The analyses are based on 305 fully completed and 7 partially completed returns (accounting for slight discrepancies in totals). There were no written refusals although 4 blank questionnaires were returned with a review. There were 78 pairs and three triplets (different reviewers for the same manuscript) among the returns. Thus the data reflect responses of 312 reviewers to 228 manuscripts.

There were responses to 614 potential chances to identify author or institution, 286 (47%) of which were taken. Overall 84% of the responses taken correctly identified author or institution (Table 1). "Maybe" responses were less likely than "yes" responses to be correct, but only 25% of the "maybe" responses were incorrect. Author and institution were identified correctly to the same extent even when responses were disaggregated (Table 2). Thus blinding could be considered successful 53% or 61% of the time, depending on whether successful blinding ignores identification or includes only correct identification.

Among those reviewing the same manuscript there was agreement in 108 (90%) of the 120 chances taken in common; in 11 of the 120 chances the agreement consisted of an incorrect identification by both respondents.

Self-referencing (61.8%) and personal knowledge (38.2%) were the two clues given for identification of author and/or institution. In both cases 16% of the identifications were incorrect. Clues given and incorrect identifications were unrelated to opinions concerning blind review.

Overall, blinding was favored by 75% of the respondents with 8% stating they had no preference. The 17% initially opposed to blind review is reduced to 11%, and the proportion with no preference increased to 14% when the follow-up of those opposed to blind review is considered.

The principal reason given for their opinion by those favoring blind review was the elimination of bias (Table 3). The principal reason given for their opinion by those opposing blind review was failure of the attempt to blind (in 2 out of the 14 chances taken by this group, identification was incorrect). Two other reasons concerned with the effect of knowing author identity on the review itself appear to contradict each other.

Of 30 reviewers initially opposed to blind review who, on follow-up, expressed an interest in receiving the manuscript face sheet, only 8 stated they would sign all their reviews; 19 indicated they would not do so, and 3 would do so only in some cases.

Discussion

Blinding of this group of reviewers was somewhat less successful than has been reported by others,[6,11] perhaps because self-referencing was more common. Moreover, in the type of population studies published by *AJPH,* the text must identify the source of the data. However, self-referencing that yields an unfamiliar name may mean nothing to a reviewer. Many reviewers noted that although self-referencing gave away the name, they were unfamiliar with the authors or their work. If all 82 responses that mentioned only self-reference are eliminated, blinding of author could be considered success-

TABLE 3—Reviewers[a] Stated Reasons for Opinions About Blind Review

Favor Blind Review	Number
Objectivity: judge content, not author	143
Comfort: less pressure, less hesitation to criticize	14
Helps beginning researcher if name is unknown	12
Total	169
Oppose Blind Review	
Blinding does not work	18
Names do not influence my judgment	15
Knowing author's background and track record contributes to judging paper.	14
Total	47

[a]Ninety-six respondents (31%) gave no reason for opinion.

ful, whether or not identification was correct, 83% of the time. Many reviewers who favored blind review commented that they could often identify the author.

It is possible that the long-standing blind review policy of the *AJPH* may have influenced the opinion of our reviewers. However, as reported elsewhere,[13] the vast majority of these reviewers also review for many other journals, most of which do not have such a blind review policy.

All reports of the success of manuscript blinding reflect a Hawthorne effect whose impact is unknown: reviewers may seek out author and institutional identity more vigorously than in their usual review because the question is asked. Evidence for this constraint on the interpretation of these data can be found in this study: in 11 of the 120 chances taken in common, 1 reviewer identified author and/or institution correctly, giving as the reason self-reference, whereas the other reviewer of the same manuscript claimed to be unable to make any identification.

Most of those opposed to blind review would not sign their reviews, throwing doubt on the feasibility of a truly "open" review process. As an editor I, too, would be opposed to having the reviewers sign their reviews because their signing would intrude a third person into the decision process. Those who favored blind review were not asked whether they would sign their reviews.

This survey was not designed to assess the effect of blinding on the content of the review or the reviewers' recommendations to the editor. Nevertheless, the findings can be interpreted as evidence both for and against blinding. Against blinding is the fact that in about half the manuscripts some identification was claimed. Thus if identification biases the reviewer, it does so for some authors but not for others, affecting the equity of the review process; an appreciable number of cases may be falsely identified. In favor of blinding is the fact that a small number of reviewers opposed to blind review apparently felt that the track record and background of authors were factors that could influence their judgment about a paper. This may be reasonable for the rare opinion piece, but it implies a possible bias in the case of a research paper that should be judged solely on its merits.

The vast majority of *AJPH* reviewers favoring blind review contrasts with a recent report of a reader survey of the Federation of American Societies for Experimental Biology (FASEB) journal; most of the respondents were also reviewers (Lew Gidez, personal communication). Response rate for this survey was 45%, but there were 871 respondents. Half of the respondents were opposed to blind review compared with 17% or less of the *AJPH* reviewers. One can only speculate about reasons for this difference of opinion; the fact that the *FASEBJ* reviewers are closer to the physical sciences and that *AJPH* reviewers are closer to the social sciences may account for some of this difference.

Although blind review may produce a somewhat kinder and more complete review,[11] I doubt that it can remove bias where negative or positive reviewer bias is associated with reviewer knowledge of author identity. I believe one must rely on the reviewers themselves to be frank about their own biases. Many reviewers return papers with a note recusing themselves for a variety of reasons. Moreover, it is the editor, not the reviewer, who makes the decision on a manuscript, and the editor cannot be blinded.

The fact that the majority of *AJPH* reviewers prefer to continue the blind review policy seems sufficient reason to continue it. Until more definitive data are in, reviewer preference, which differs from journal to journal, seems the most legitimate guide to the policy of journals on blind review. □

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References

1. Crane D. The gatekeepers of science: some factors affecting the selection of articles for scientific journals. Am Sociol 1967; 2:195–201.
2. Coe RK, Weinstock I. Editorial policies of major economic journals. Quart Rev Econ Business 1967; 7:37–43.
3. Cleary JD, Alexander B. Blind review versus non-blind review: survey of selected medical journals. Drug Intell Clin Pharm 1988; 22:601–602.
4. Weller AC. Editorial peer review in U.S. medical journals. JAMA 1990; 263:1344–1347.
5. Service FJ. Manuscript review. Diabetes Care 1983; 6:208–209.
6. Moosy J, Moosy YR. Anonymous authors, anonymous referees: an editorial exploration. J Neuropathol Exp Neurol 1985; 44:225–228.
7. McGiffert M. Is justice blind? An inquiry into peer review. Schol Publ October 1988; 44–48.
8. Armstrong JS. Barriers to scientific communications: the author's formula. In: Harnad S, Peer commentary on peer review. Behav Brain Sciences 1982; 5:197–199.
9. Scarr S. Anosmic peer review: a rose by another name is evidently not a rose. In: Harvard S, Peer commentary on peer review. Behav Brain Sciences 1982; 5:237–238.
10. Morgan PP. Anonymity in medical journals. Can Med Assoc J 1984; 131:1007–1008.
11. McNutt MD, Evans RT, Fletcher RH, Fletcher SW. The effects of blinding on the quality of peer review. JAMA 1990; 263:1371–1376.
12. Knox FG. No unanimity about anonymity. J Lab Clin Med 1981; 97:1–3.
13. Yankauer A. Who are the peer reviewers and how much do they review? JAMA 1990; 263:1338–1340.